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Sperry. R. W. (1948) Effect of crossing nerves to antagonistic limb muscles in the monkey. *Bio. Abs.*22(2), 2105.

Author's Abstract

The nerves supplying the flexor and extensor muscles of the elbow were reciprocally crossed in 6 monkeys (4 Ateles geoffroyi, 2 Macaca mulatta). These nerve crosses were similar to some made in earlier studies on the rat and thus permitted a comparison of the adaptation capacity of the nervous system of monkey and rat under conditions roughly comparable. A marked superiority of the monkey was evident. The reversed limb movements produced by the nerve interchange led persisted indefinitely in the rat with no reeducative correction or even inhibition. The monkey, however, was quick to adopt a large variety of compensatory "trick" adjustments and to inhibit the reversed action at the elbow. Eventually some positive correction in the action of the abnormally innervated muscles was attained. At the end of 3 years of post-operative training, however, the animals still showed frequent lapses into reversed movement particularly when confronted with new motor tasks. The corrected arm movements remained, for the most part, slow and uncertain compared to those of an operated control case. In a few simple and frequently repeated acts the adjusted coordination of the reinnervated muscles became fairly smooth and automatic.